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## DETAILED DESCRIPTION

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### [Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to a reproducing unit with a screen saver function.

[0002]

[Description of the Prior Art] Although there are examples, such as a reproducing unit which stuck the touch panel on the LCD panel and was used as a control unit, for example, conventionally with the equipment which has a display, when the contents of fixed time amount and a display do not change, in order to prevent printing of the LCD panel and to protect this LCD panel in this case, usually has adopted the screen saver function.

[0003]

[Problem(s) to be Solved by the Invention] However, in the above-mentioned conventional example, when conditions, such as a jam, a toner piece, and those without paper, occur in a reproducing unit and the warning message is being displayed on the display of a control unit, said warning message will be concealed by operating a screen saver function.

[0004] Therefore, in case a reproducing unit is used, a screen saver function is made to cancel, for the first time, I hear that he notices a warning message and the technical problem of it becoming impossible to check in advance occurs.

[0005] This invention was accomplished paying attention to the above-mentioned point, enables a switch of the method of presentation/display screen of a screen saver function, it switches seizure prevention of a screen and a warning message suitably, displays them, and aims at offering the reproducing unit with a screen saver function which can check the contents of warning in advance.

[0006]

[Means for Solving the Problem] This invention can solve the above-mentioned technical problem by having the following configuration.

[0007] (1) The reproducing unit with a screen saver function characterized by enabling a switch of the method of presentation/display screen of said screen saver function in the reproducing unit which equipped the control unit with the screen saver function and the display when abnormalities are detected.

[0008] (2) said -- the method of presentation -- /-- the display screen -- a switch -- detecting -- having had -- abnormalities -- the contents -- responding -- warning -- emitting -- and -- warning -- the contents -- a display -- being possible -- \*\* -- carrying out -- things -- the description -- \*\* -- carrying out -- the preceding clause -- ( -- one -- ) -- a publication -- a screen saver -- a function -- with -- a reproducing unit .

[0009] (3) A switch of said method of presentation/display screen is a reproducing unit with a screen saver function given in the preceding clause (1) characterized by what is switched and displayed on the image prepared beforehand according to said contents of warning.

[0010] (4) said -- the method of presentation -- /-- a display screen -- a switch -- a screen saver -- a screen -- a display -- a request -- fixed -- a time interval -- every -- discharge -- being possible -- \*\* --

having carried out -- things -- the description -- \*\* -- carrying out -- the preceding clause -- ( -- one -- ) -- a publication -- a screen saver -- a function -- with -- a reproducing unit .

[0011] (5) Said control unit is a reproducing unit with a screen saver function given in the preceding clause (1) characterized by being an elevation surface configuration.

[0012] (6) Said display is a reproducing unit with a screen saver function given in the preceding clause (1) characterized by including a selectable touch panel for a copy function.

[0013]

[Embodiment of the Invention] The gestalt of 1 operation of the reproducing unit with a screen saver function concerning this invention is explained below.

[0014] The side cross-section explanatory view showing the example of a configuration of the reproducing unit with a screen saver function which drawing 1 requires for this invention, the block diagram showing the example of circuitry of the control unit of the reproducing unit with a screen saver function which drawing 2 requires for this invention, the explanatory view in which drawing 3 shows an example of the actuation screen of the display selection section of a control unit, the explanatory view in which drawing 4 shows an example of a screen saver image, and drawing 5 are the explanatory views showing an example of the screen saver image for warning.

[0015] The example of equipment of drawing 1 should show the color copying machine which has for example, an elevation surface configuration control unit.

[0016] Take and it is in drawing 1 , and 200 is a control unit and consists of display selection section 200a and key input section 200b.

[0017] The various functions concerning a copy function are set up by display selection section 200a, and initiation of a copy function is directed by key input section 200b, and the following actuation is performed when those information transmits and communicates to the system control circuit which manages control of the whole reproducing unit.

[0018] That is, on manuscript base glass 201, it is read and the \*\*\*\*\* manuscript 202 is laid, this manuscript 202 is irradiated by lighting 203, and image formation is carried out by optical system 207 on CCD208 via mirrors 204, 205, and 206. Furthermore, by the motor 209, the 2nd mirror unit 211 which a mirror 204 and the 1st mirror unit 210 which includes lighting 203 structurally are rates V, and includes mirrors 205 and 206 structurally is driven by rate V / 2, and the whole surface of a manuscript 202 is scanned.

[0019] 212 is the image-processing section and is a part which processes the read image as an electrical signal and is outputted as a printing signal.

[0020] 213, 214, 215, and 216 are semiconductor laser, it drives with the printing signal outputted from the image-processing section 212, and the laser light which emitted light with each semiconductor laser forms a latent image on photoconductor drums 225, 226, and 227 and 228 by the polygon mirrors 217, 218, 219, and 220. 221, 222, 223, and 224 are the development counters for developing a latent image with the toner of K, Y, C, and M, respectively, and the developed toner of each color is imprinted by the form and it succeeds in a full color printout. Through the resist roller 233, on the imprint belt 234, it adsorbs and the form to which paper was fed from either the form cassettes 229, 230, and 231 and the detachable tray 232 is conveyed. Synchronizing with the timing of feeding, the toner of each color is beforehand developed by photoconductor drums 225, 226, 227, and 228, and a toner is imprinted by the form with conveyance of a form.

[0021] Separation conveyance is carried out from the imprint belt 234, a form is fixed to a toner, the form with which the toner of each color was imprinted is discharged by the fixing assembly 235 on a paper output tray 236, and a series of copy-function actuation completes it by it.

[0022] Drawing 2 is the block diagram showing the example of circuitry of the control unit of the reproducing unit with a screen saver function concerning this invention, and explains an example of operation below.

[0023] In drawing 2 , 1 is CPU and is performing the communication link with the system control circuit 237 which controls the whole reproducing unit which managed and mentioned control of the whole control unit above.

[0024] 2 is a program and ROM which has memorized two or more images displayed on a control unit, and RAM3 is the work-piece memory of CPU1.

[0025] 4 is a LCD control circuit and is performing image display control to the LCD panel 6 which performs read/write control of VRAM (Video RAM)5, and constitutes display selection section 200a.

[0026] That is, after the image memorized by ROM2 is memorized by VRAM5 through the LCD control circuit 4 by CPU1, shortly, it is read and is outputted to the LCD panel 6. The actuation screen was shown in drawing 3 as an example of a display.

[0027] 7 is the touch panel stuck on the LCD panel 6 of display selection section 200a, by touching directly the function performed by the reproducing unit displayed on the LCD panel 6 with a finger etc., judges the location by the input/output control circuit 11, and communicates [ which function on a screen was chosen, and ] to CPU1.

[0028] Key input section 200b consists of a key input circuit 8 which consists of a start key, a reset key, etc., an LED output circuit 9 showing the status of a reproducing unit, and buzzer 10 grade for telling with a sound whether it succeeded in a functional setup certainly with the touch panel 7. Moreover, key input section 200b is controlled by the input/output control circuit 11, and performs the communication link with the system control circuit 237 through CPU1 if needed.

[0029] Next, the flow for the principal part of a control unit of operation is explained.

[0030] Although the function which was mentioned above and which was displayed on the LCD panel 6 by the touch panel 7 like is chosen by touching directly in the case of an input, such as performing a functional setup to a control unit, when the further related function is in the selected function, a new actuation screen is displayed and the function is set up. By starting the start key of the key input circuit 8, the information on these functional setup communicates in the system control circuit 237 through the input/output control circuit 11 and CPU1, and operates a series of copy functions mentioned above.

[0031] When there is no input to a control unit, the seizure phenomenon of the LCD panel 6 occurs by giving a long duration indication of the actuation screen which agglutinated the LCD panel 6. In order to prevent this, by the timer function of CPU1, after the time amount progress set up beforehand operated the screen saver function, and was memorized by ROM2, for example, displays the image for screen savers as shown in drawing 4.

[0032] Moreover, when some abnormalities, such as paper nothing, a toner piece, and a jam, occur in a reproducing unit, while displaying the error message which means the abnormal condition on an actuation screen, after the time amount progress set up further beforehand operated the screen saver function, and was memorized by ROM2, for example, displays the image for screen savers as shown in drawing 5 R>5. However, the image for the screen savers of drawing 4 and drawing 5 cannot be overemphasized by having constituted the dynamic image and having prevented the printing phenomenon by repeating two or more images, and switching and displaying them.

[0033]

[Effect of the Invention] As explained above, according to this invention, a switch of the method of presentation/display screen of a screen saver function is enabled, seizure prevention of a screen and a warning message are switched suitably, and are displayed, and the effectiveness that the contents of warning can be checked in advance is presented.

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[Translation done.]

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**CLAIMS**

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**[Claim(s)]**

[Claim 1] The reproducing unit with a screen saver function characterized by enabling a switch of the method of presentation/display screen of said screen saver function in the reproducing unit which equipped the control unit with the screen saver function and the display when abnormalities are detected.

[Claim 2] A switch of said method of presentation/display screen is a reproducing unit with a screen saver function according to claim 1 characterized by emitting warning and enabling the display of the contents of warning according to the contents of the detected abnormalities.

[Claim 3] A switch of said method of presentation/display screen is a reproducing unit with a screen saver function according to claim 1 characterized by what is switched and displayed on the image prepared beforehand according to said contents of warning.

[Claim 4] A switch of said method of presentation/display screen is a reproducing unit with a screen saver function according to claim 1 characterized by enabling discharge of the display of a screen saver screen for every desired fixed time interval.

[Claim 5] Said control unit is a reproducing unit with a screen saver function according to claim 1 characterized by being an elevation surface configuration.

[Claim 6] Said display is a reproducing unit with a screen saver function according to claim 1 characterized by including a selectable touch panel for a copy function.

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## TECHNICAL FIELD

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#### PRIOR ART

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## EFFECT OF THE INVENTION

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## TECHNICAL PROBLEM

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## MEANS

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[0017] The various functions concerning a copy function are set up by display selection section 200a, and initiation of a copy function is directed by key input section 200b, and the following actuation is

performed when those information transmits and communicates to the system control circuit which manages control of the whole reproducing unit.

[0018] That is, on manuscript base glass 201, it is read and the \*\*\*\*\* manuscript 202 is laid, this manuscript 202 is irradiated by lighting 203, and image formation is carried out by optical system 207 on CCD208 via mirrors 204, 205, and 206. Furthermore, by the motor 209, the 2nd mirror unit 211 which a mirror 204 and the 1st mirror unit 210 which includes lighting 203 structurally are rates V, and includes mirrors 205 and 206 structurally is driven by rate V / 2, and the whole surface of a manuscript 202 is scanned.

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[0020] 213, 214, 215, and 216 are semiconductor laser, it drives with the printing signal outputted from the image-processing section 212, and the laser light which emitted light with each semiconductor laser forms a latent image on photoconductor drums 225, 226, and 227 and 228 by the polygon mirrors 217, 218, 219, and 220. 221, 222, 223, and 224 are the development counters for developing a latent image with the toner of K, Y, C, and M, respectively, and the developed toner of each color is imprinted by the form and it succeeds in a full color printout. Through the resist roller 233, on the imprint belt 234, it adsorbs and the form to which paper was fed from either the form cassettes 229, 230, and 231 and the detachable tray 232 is conveyed. Synchronizing with the timing of feeding, the toner of each color is beforehand developed by photoconductor drums 225, 226, 227, and 228, and a toner is imprinted by the form with conveyance of a form.

[0021] Separation conveyance is carried out from the imprint belt 234, a form is fixed to a toner, the form with which the toner of each color was imprinted is discharged by the fixing assembly 235 on a paper output tray 236, and a series of copy-function actuation completes it by it.

[0022] Drawing 2 is the block diagram showing the example of circuitry of the control unit of the reproducing unit with a screen saver function concerning this invention, and explains an example of operation below.

[0023] In drawing 2, 1 is CPU and is performing the communication link with the system control circuit 237 which controls the whole reproducing unit which managed and mentioned control of the whole control unit above.

[0024] 2 is a program and ROM which has memorized two or more images displayed on a control unit, and RAM3 is the work-piece memory of CPU1.

[0025] 4 is a LCD control circuit and is performing image display control to the LCD panel 6 which performs read/write control of VRAM (Video RAM)5, and constitutes display selection section 200a.

[0026] That is, after the image memorized by ROM2 is memorized by VRAM5 through the LCD control circuit 4 by CPU1, shortly, it is read and is outputted to the LCD panel 6. The actuation screen was shown in drawing 3 as an example of a display.

[0027] 7 is the touch panel stuck on the LCD panel 6 of display selection section 200a, by touching directly the function performed by the reproducing unit displayed on the LCD panel 6 with a finger etc., judges the location by the input/output control circuit 11, and communicates [ which function on a screen was chosen, and ] to CPU1.

[0028] Key input section 200b consists of a key input circuit 8 which consists of a start key, a reset key, etc., an LED output circuit 9 showing the status of a reproducing unit, and buzzer 10 grade for telling with a sound whether it succeeded in a functional setup certainly with the touch panel 7. Moreover, key input section 200b is controlled by the input/output control circuit 11, and performs the communication link with the system control circuit 237 through CPU1 if needed.

[0029] Next, the flow for the principal part of a control unit of operation is explained.

[0030] Although the function which was mentioned above and which was displayed on the LCD panel 6 by the touch panel 7 like is chosen by touching directly in the case of an input, such as performing a functional setup to a control unit, when the further related function is in the selected function, a new actuation screen is displayed and the function is set up. By starting the start key of the key input circuit 8, the information on these functional setup communicates in the system control circuit 237 through the

*page 11*

input/output control circuit 11 and CPU1, and operates a series of copy functions mentioned above. [0031] When there is no input to a control unit, the seizure phenomenon of the LCD panel 6 occurs by giving a long duration indication of the actuation screen which agglutinated the LCD panel 6. In order to prevent this, by the timer function of CPU1, after the time amount progress set up beforehand operated the screen saver function, and was memorized by ROM2, for example, displays the image for screen savers as shown in drawing 4.

[0032] Moreover, when some abnormalities, such as paper nothing, a toner piece, and a jam, occur in a reproducing unit, while displaying the error message which means the abnormal condition on an actuation screen, after the time amount progress set up further beforehand operated the screen saver function, and was memorized by ROM2, for example, displays the image for screen savers as shown in drawing 5 R> 5. However, the image for the screen savers of drawing 4 and drawing 5 cannot be overemphasized by having constituted the dynamic image and having prevented the printing phenomenon by repeating two or more images, and switching and displaying them.

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## DESCRIPTION OF DRAWINGS

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**[Brief Description of the Drawings]**

**[Drawing 1]** The side cross-section explanatory view showing the example of a configuration of the reproducing unit with a screen saver function concerning this invention

**[Drawing 2]** The block diagram showing the example of circuitry of the control unit of the reproducing unit with a screen saver function concerning this invention

**[Drawing 3]** The explanatory view showing an example of the actuation screen of the display selection section of a control unit

**[Drawing 4]** The explanatory view showing an example of a screen saver image

**[Drawing 5]** The explanatory view showing an example of the screen saver image for warning

**[Description of Notations]**

200 Control Unit

200a Display selection section

200b Key input section

201 Manuscript Base Glass

202 Manuscript

203 Lighting

204, 205, 206 Mirror

207 Optical System

208 CCD

209 Motor

210 1st Mirror Unit

211 2nd Mirror Unit

212 Image-Processing Section

213, 214, 215, 216 Semiconductor laser

217, 218, 219, 220 Polygon mirror

225, 226, 227, 228 Photoconductor drum

229, 230, 231 Form cassette

232 Detachable Tray

233 Resist Roller

234 Imprint Belt

235 Fixing Assembly

236 Paper Output Tray

237 System Control Circuit

1 CPU

2 ROM

3 RAM

4 LCD Control Circuit

5 VRAM

- 6 The LCD Panel
- 7 Touch Panel
- 8 Key Input Circuit
- 9 LED Output Circuit
- 10 Buzzer
- 11 Input/output Control Circuit

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[Translation done.]

**JAPANESE** [JP,2000-341461,A]

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**CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE  
INVENTION TECHNICAL PROBLEM MEANS DESCRIPTION OF DRAWINGS DRAWINGS**

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[Translation done.]

# PATENT ABSTRACTS OF JAPAN

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(43)Date of publication of application : 08.12.2000

(51)Int.CI. H04N 1/00  
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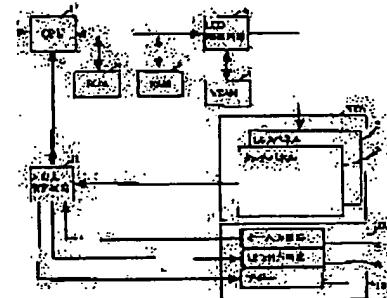
(21)Application number : 11-149991 (71)Applicant : CANON INC  
(22)Date of filing : 28.05.1999 (72)Inventor : OHARA EIJI

## (54) COPYING DEVICE WITH SCREEN SAVER FUNCTION

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To prevent the burn of a screen and to previously recognize caution contents by displaying a caution message, while appropriately switching it by enabling switching of the display method/display picture of a screen saver function, when abnormality is detected in a copying device.

**SOLUTION:** An image stored in an ROM 2 is stored via an LCD control circuit 4 into a VRAM 5 by a CPU 1, read out this time and outputted to an LCD panel 6 later. When there is an input for function setting to an operating part, a function displayed on the LCD panel 6 by a touch panel 7 is selected by directly touching the panel 7. When there are further related functions in the selected function, however, a new operation picture is displayed, and the functions are set. The information of this function setting is communication via an input/output control circuit 11 and the CPU 1 to a system control circuit 237, by activating the start key of a key input circuit 8 and series of copy functions are made to operate.



### LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

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(71) 出願人 000001007

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HV13 HV14 HV32

2H027 GA20 GA23

5C062 AA05 AB20 AB25 AB41 AB42

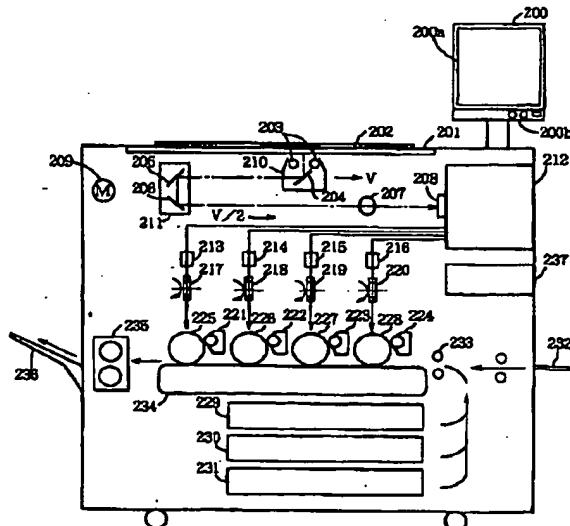
AC05 AF15 BA00

(54) 【発明の名称】スクリーンセーバー機能付き複写装置

(57) 【要約】

【課題】 スクリーンセーバー機能の表示方法／表示画面を切り替え可能とし、スクリーンの焼き付き防止と警告メッセージを適宜切り換えて表示し、警告内容を事前に確認出来るスクリーンセーバー機能付き複写装置の提供。

【解決手段】 操作部 200 にスクリーンセーバー機能及び表示部を備えた複写装置において、異常が検出された場合、前記スクリーンセーバー機能の表示方法／表示画面を切り替え可能とすることを特徴とする。



【特許請求の範囲】  
 【請求項1】 操作部にスクリーンセーバー機能及び表示部を備えた複写装置において、異常が検出された場合、前記スクリーンセーバー機能の表示方法／表示画面を切り換え可能とすることを特徴とするスクリーンセーバー機能付き複写装置。

【請求項2】 前記表示方法／表示画面の切り換えは、検出された異常の内容に応じて、警告を発し、且つ警告内容を表示可能とすることを特徴とする請求項1記載のスクリーンセーバー機能付き複写装置。

【請求項3】 前記表示方法／表示画面の切り換えは、前記警告内容に応じて、予め用意された画像に切り換えて表示することを特徴とする請求項1記載のスクリーンセーバー機能付き複写装置。

【請求項4】 前記表示方法／表示画面の切り換えは、スクリーンセーバー画面の表示を、所望の一定時間間隔毎に解除可能としたことを特徴とする請求項1記載のスクリーンセーバー機能付き複写装置。

【請求項5】 前記操作部は、立面形状であることを特徴とする請求項1記載のスクリーンセーバー機能付き複写装置。

【請求項6】 前記表示部は、複写機能を選択可能なタッチパネルを含むことを特徴とする請求項1記載のスクリーンセーバー機能付き複写装置。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】 本発明は、スクリーンセーバー機能付き複写装置に関する。

【0002】

【従来の技術】 従来、表示部を有する装置等では、例えば、LCDパネルにタッチパネルを貼り付け、操作部として用いた複写装置等の例があるが、この場合においては、一定時間、表示内容が変化しない場合、LCDパネルの焼き付きを防止し、該LCDパネルを保護するため、スクリーンセーバー機能を採用しているのが通例である。

【0003】

【発明が解決しようとする課題】 然しながら上述の従来例では、複写装置にジャム、トナーアーチ、紙無し等の状態が発生し、その警告メッセージを操作部の表示部に表示している場合には、スクリーンセーバー機能を動作させることにより、前記警告メッセージを隠蔽してしまうこととなる。

【0004】 従って、複写装置を使用する際、スクリーンセーバー機能を解除させて初めて、警告メッセージに気付くということで、事前に確認出来なくなるという課題がある。

【0005】 本発明は、上述の点に着目して成されたもので、スクリーンセーバー機能の表示方法／表示画面を切り換え可能とし、スクリーンの焼き付き防止と警告メ

ッセージを適宜切り換えて表示し、警告内容を事前に確認出来るスクリーンセーバー機能付き複写装置を提供することを目的とする。

【0006】

【課題を解決するための手段】 本発明は、下記構成を備えることにより上記課題を解決できるものである。

【0007】 (1) 操作部にスクリーンセーバー機能及び表示部を備えた複写装置において、異常が検出された場合、前記スクリーンセーバー機能の表示方法／表示画面を切り換え可能とすることを特徴とするスクリーンセーバー機能付き複写装置。

10 【0008】 (2) 前記表示方法／表示画面の切り換えは、検出された異常の内容に応じて、警告を発し、且つ警告内容を表示可能とすることを特徴とする前項(1)記載のスクリーンセーバー機能付き複写装置。

【0009】 (3) 前記表示方法／表示画面の切り換えは、前記警告内容に応じて、予め用意された画像に切り換えて表示することを特徴とする前項(1)記載のスクリーンセーバー機能付き複写装置。

20 【0010】 (4) 前記表示方法／表示画面の切り換えは、スクリーンセーバー画面の表示を、所望の一定時間間隔毎に解除可能としたことを特徴とする前項(1)記載のスクリーンセーバー機能付き複写装置。

【0011】 (5) 前記操作部は、立面形状であることを特徴とする前項(1)記載のスクリーンセーバー機能付き複写装置。

【0012】 (6) 前記表示部は、複写機能を選択可能なタッチパネルを含むことを特徴とする前項(1)記載のスクリーンセーバー機能付き複写装置。

30 【0013】

【発明の実施の形態】 以下に本発明に係るスクリーンセーバー機能付き複写装置の一実施の形態を説明する。

【0014】 図1は、本発明に係るスクリーンセーバー機能付き複写装置の構成例を示す側断面説明図、図2は本発明に係るスクリーンセーバー機能付き複写装置の操作部の回路構成例を示すブロック図、図3は操作部の表示選択部の操作画面の一例を示す説明図、図4はスクリーンセーバー画像の一例を示す説明図、図5は警告用スクリーンセーバー画像の一例を示す説明図である。

40 【0015】 図1の装置例は、例えば、立面形状操作部を有するカラー複写機を示したものとする。

【0016】 図1において、200は操作部であり、表示選択部200a及びキー入力部200bと構成されている。

【0017】 表示選択部200aにより、複写機能に係る各種機能を設定し、且つキー入力部200bにより、複写機能の開始が指示され、それらの情報が、複写装置全体の制御を司るシステム制御回路へ伝送・通信されることにより以下の動作が行われる。

50 【0018】 即ち、原稿台ガラス201上に、読み取ら

れれるべき原稿202が載置され、該原稿202は、照明203により照射され、ミラー204、205、206を経由して光学系207によりCCD208上に結像される。更にモータ209により、ミラー204、照明203を構造的に包含する第1ミラーユニット210は速度Vで、またミラー205、206を構造的に包含する第2ミラーユニット211は速度V/2で駆動され、原稿202の全面が走査される。

【0019】212は、画像処理部であり、読み取った画像を電気信号として処理し、印刷信号として出力する部分である。

【0020】213、214、215、216は、半導体レーザーであり、画像処理部212より出力された印刷信号によって駆動され、夫々の半導体レーザーによって発光されたレーザー光は、ポリゴンミラー217、218、219、220によって感光ドラム225、226、227、228上に潜像を形成する。221、222、223、224は、K、Y、C、Mのトナーによって、夫々潜像を現像するための現像器であり、現像された各色のトナーは、用紙に転写され、フルカラーの印刷出力が為される。用紙カセット229、230、231及び手差しトレイ232の何れかから給紙された用紙は、レジストローラー233を経て、転写ベルト234上に吸着され、搬送される。給紙のタイミングと同期して、予め感光ドラム225、226、227、228には、各色のトナーが現像されており、用紙の搬送と共に、トナーが用紙に転写される。

【0021】各色のトナーが転写された用紙は、転写ベルト234から分離搬送され定着器235によって、用紙にトナーが定着され、排紙トレイ236上に排出され、一連の複写機能動作が完了する。

【0022】図2は本発明に係るスクリーンセーバー機能付き複写装置の操作部の回路構成例を示すブロック図であり、動作例について以下に説明する。

【0023】図2において、1はCPUであり、操作部全体の制御を司り、前述した複写装置全体を制御するシステム制御回路237との通信を行っている。

【0024】2は、プログラム、及び操作部に表示する複数の画像を記憶しているROMであり、RAM3は、CPU1のワークメモリである。

【0025】4は、LCD制御回路であり、VRAM(ビデオRAM)5のリードライト制御を行い、また表示選択部200aを構成しているLCDパネル6への画像表示制御を行っている。

【0026】即ち、ROM2に記憶された画像が、CPU1によりLCD制御回路4を介してVRAM5に記憶された後、今度は読み出されてLCDパネル6に出力される。表示例として操作画面を図3に示した。

【0027】7は、表示選択部200aのLCDパネル6上に貼り付けられたタッチパネルであり、LCDパネ

ル6に表示された複写装置で行う機能を、指などで直接触れることにより、その位置を入出力制御回路11により判断し、画面上のどの機能が選択されたかをCPU1に通信する。

【0028】キー入力部200bは、スタートキー、セッティングキー等で構成されるキー入力回路8や、複写装置のステータスを表すLED出力回路9や、タッチパネル7により機能設定が確実に為されたかを、音により知らせるためのブザー10等から構成されている。また、キー入力部200bは、入出力制御回路11によって制御され、必要に応じてCPU1を介してシステム制御回路237との通信を行う。

【0029】次に、操作部の主要部分の動作フローについて説明する。

【0030】操作部に機能設定を行う等の入力の際、前述した様にタッチパネル7にてLCDパネル6に表示された機能を、直接触れることにより選択するが、その選択された機能に更なる関連機能が有る場合は、新たな操作画面を表示し、機能を設定していく。これらの機能設定の情報は、キー入力回路8のスタートキーを起動させることにより、入出力制御回路11、CPU1を介してシステム制御回路237に通信され、前述した一連の複写機能を動作させる。

【0031】操作部への入力がない場合は、LCDパネル6に膠着した操作画面が長時間表示されることにより、LCDパネル6の焼き付き現象が発生する。これを防止するため、CPU1のタイマー機能により、予め設定された時間経過後はスクリーンセーバー機能を動作させ、ROM2に記憶された、例えば図4に示すようなスクリーンセーバー用の画像を表示させる。

【0032】また、複写装置に紙無し、トナーカー、ジヤム等の何らかの異常が発生した場合は、操作画面にその異常状態を意味するエラーメッセージを表示すると共に、更に、予め設定された時間経過後はスクリーンセーバー機能を動作させ、ROM2に記憶された、例えば図5に示すようなスクリーンセーバー用の画像を表示させる。ただし、図4及び図5のスクリーンセーバー用の画像とは、例えば複数の画像を繰り返し、切り替え表示することにより、動画像を構成し、焼き付き現象を防いでいることは言うまでもない。

【0033】

【発明の効果】以上説明したように、本発明によれば、スクリーンセーバー機能の表示方法/表示画面を切り替え可能とし、スクリーンの焼き付き防止と警告メッセージを適宜切り替えて表示し、警告内容を事前に確認出来るという効果を呈する。

【図面の簡単な説明】

【図1】 本発明に係るスクリーンセーバー機能付き複写装置の構成例を示す側断面説明図

【図2】 本発明に係るスクリーンセーバー機能付き複

## 写装置の操作部の回路構成例を示すブロック図

【図3】 操作部の表示選択部の操作画面の一例を示す  
説明図

【図4】 スクリーンセーバー画像の一例を示す説明図

【図5】 警告用スクリーンセーバー画像の一例を示す  
説明図

## 【符号の説明】

200 操作部

200a 表示選択部

200b キー入力部

201 原稿台ガラス

202 原稿

203 照明

204、205、206 ミラー

207 光学系

208 CCD

209 モータ

210 第1ミラーユニット

211 第2ミラーユニット

212 画像処理部

213、214、215、216 半導体レーザー

217、218、219、220 ポリゴンミラー

225、226、227、228 感光ドラム

229、230、231 用紙カセット

232 手差しトレイ

233 レジストローラー

234 転写ベルト

235 定着器

236 排紙トレイ

237 システム制御回路

10 1 CPU

2 ROM

3 RAM

4 LCD制御回路

5 VRAM

6 LCDパネル

7 タッチパネル

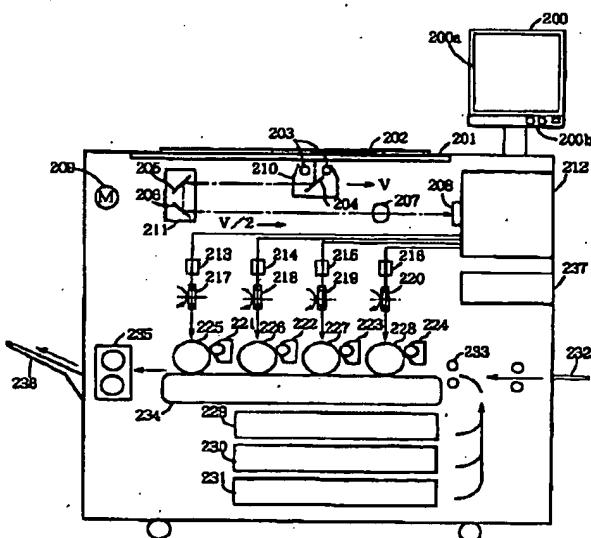
8 キー入力回路

9 LED出力回路

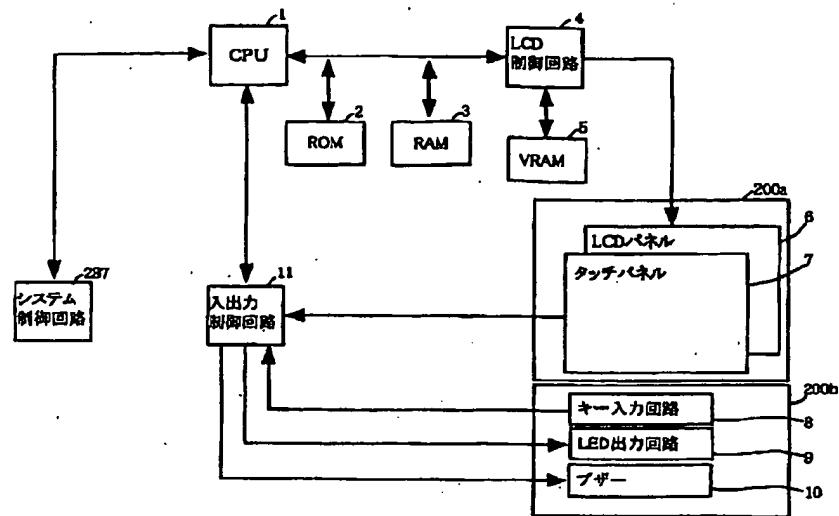
10 プザー

20 11 入出力制御回路

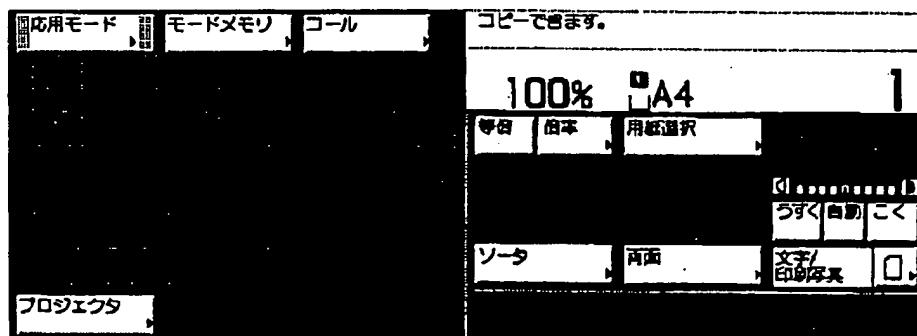
【図1】



【図2】



【図3】



【図4】



【図5】

